

CLAIMS

- 5 1. A cover gas composition for protecting molten magnesium/magnesium alloy, the composition including a fluorine containing inhibiting agent and a carrier gas, wherein each component of the composition has a Global Warming Potential (GWP) (referenced to the absolute GWP for carbon dioxide at a time horizon of 100 years) of less than 5000.
- 10 2. A composition as claimed in claim 1 wherein the inhibiting agent has no ozone depletion potential.
- 15 3. A composition as claimed in ~~claim 1 or claim 2~~ ^{CLAIM 1} wherein the carrier gas is selected from the group consisting of air, carbon dioxide, argon, nitrogen and mixtures thereof.
- 20 4. A composition as claimed in ~~any one of the preceding claims~~ ^{CLAIM 1} wherein each component of the composition has a GWP of less than 3000.
- 25 5. A composition as claimed in ~~any one of the preceding claims~~ ^{CLAIM 1} wherein the inhibiting agent is selected from the group consisting of hydrofluorocarbons, hydrofluoroethers and mixtures thereof.
- 30 6. A composition as claimed in ~~any one of the preceding claims~~ ^{CLAIM 1} wherein the inhibiting agent has a boiling point of less than 100°C.
- 35 7. A composition as claimed in ~~any one of the preceding claims~~ ^{CLAIM 1} wherein the inhibiting agent is selected from the group consisting of difluoromethane, pentafluoroethane, 1,1,1,2-tetrafluoroethane, difluoroethane, heptafluoropropane, methoxy-nonafluorobutane, ethoxy-nonafluorobutane,

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dihydrodecafluoropentane and mixtures thereof.

8. A composition as claimed in ~~any one of the preceding~~ ^{CLAIM 4} ~~claims~~ wherein each component of the composition has a GWP of less than 1500.
9. A composition as claimed in ~~any one of the preceding~~ ^{CLAIM 7} ~~claims~~ wherein the inhibiting agent is 1,1,1,2-tetrafluoroethane and the carrier gas is dry air.
10. A composition as claimed in ~~any one of the preceding~~ ^{CLAIM 1} ~~claims~~ containing less than 1% by volume inhibiting agent.
11. A composition as claimed in claim 10 containing less than 0.5% by volume inhibiting agent.
12. A composition as claimed in claim 11 containing less than 0.1% by volume inhibiting agent.
13. A cover gas ~~composition~~ ^{VA} substantially as herein described in any non-comparative Example.
14. A method of protecting molten magnesium/magnesium alloy, the method including blanketing the magnesium/magnesium alloy with a cover gas composition as claimed ^{CLAIM 1} ~~in any one of the preceding claims~~.
15. Use of an inhibiting agent as defined ~~in any one of~~ ^{CLAIM 7} ~~claims 1-12~~ for preventing or minimising oxidation of molten magnesium/magnesium alloy.
16. A method of extinguishing a magnesium/magnesium alloy fire, the method including exposing the fire to an atmosphere of an inhibiting agent as defined ~~in any one~~ ^{CLAIM 7} ~~of claims 1-12~~.